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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,326	12/31/2003	Koichi Morita	P05934US01/BAS	8123

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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,326

Applicant(s)

MORITA ET AL.

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/068,592.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 063005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 6/30/2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (U.S. Patent 3,628,984, hereafter '984) in view of Bachman et al. (U.S. Patent 4,210,431, hereafter '431).

'984 teaches a method for producing a carbon material having a coating layer on the surface characterized in that the method comprises dipping a core carbon material into a coat-forming carbon material (col. 3, lines 55-75), separating the core carbon material from the coat-forming carbon material (col. 3, lines 68-70), adding a solvent to the separated core carbon

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material, which is subjected to washing, drying (col. 3, line 70-col. 4, line 10), and calcination (col. 4, lines 33-47).

'984 does not teach washing with an organic solvent. However, '431 teaches that after immersion into a decomposable carbon-containing fluid (col. 4, lines 1-8), the material to be carbonized may be rinsed with hot xylene. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substitute the sulfuric acid wash or water rinse of '984 with the hot xylene rinse of '431 with a reasonable expectation of success because '431 teaches that hot xylene is another solvent suitable to rinse carbonaceous coating between impregnation and carbonization.

Claim 2: '984 does not explicitly teach a dipping temperature (thereby suggesting impregnation occurs at room temperature). '431 explicitly teaches dipping temperatures of 70 deg. C (col. 6, lines 12-13). The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549. Also, it has been held that "differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical." (MPEP 2144.05.II.A.). Further, the Examiner takes Official Notice that immersion bath temperature in the claimed range of 10-300 deg. C are known in the carbonization art.

Claim 3: '431 teaches the solvent may be at 100 °C (col. 6, lines 16-18).

Claim 4: '984 teaches impregnating under reduced pressure (col. 3, lines 60-63).

Claim 6: '984 teaches that the impregnation material may comprise pitch (col. 7, lines 68-75).

Claim 8: The ratio of solid matter to washing solvent would have been recognized as a result-effective variable for the process because the amount of solvent used would have affected the degree of cleaning and the ease of recycling and recovering the solvent (or alternatively, the cost involved with discarding the solvent). It has been held that the discovery of the optimum value of a result effective variable in a known process is ordinarily within the skill in the art. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to

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one of ordinary skill in the art at the time the invention was made to have determined the optimum ratio of solid matter to organic solvent during washing to have optimized the degree of cleaning and ease of recycling and/or cost of discarding the solvent. Also, as stated above, “differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.” (MPEP 2144.05.II.A.)

Claim 9: The data in ‘984, Table 2, teach a ratio c of about 0.1.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa ‘984 in view of Bachman ‘431 as applied to claim 1 above, and further in view of Schardein (U.S. Patent 4,376,801, hereafter ‘801).

‘984 and ‘431 are discussed above, but do not explicitly teach that the decomposable material is heavy petroleum oil. However, ‘801 teaches that heavy petroleum oil is a suitable carbon precursor, and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used heavy petroleum oil as the particular carbon precursor of ‘984 and ‘431 with a reasonable expectation of success and with the expectation of similar results because ‘801 teaches that it is a suitable carbon precursors. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

6. Claims 10-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa ‘984 in view of Bachman ‘431 as applied to claim 1 above, and further in view of Chu et al. (U.S. Patent 4,664,774, hereafter ‘774) and Okazaki et al. (U.S. Patent 4,909,923, hereafter ‘923).

‘984 and ‘431 are discussed above, but do not explicitly teach that the decomposable material is material which has had quinoline-insoluble (QI) material removed to less than 3%. However, ‘774 teaches that impreganting pitches with less than 0.05% QI (col. 2, lines 55-60) offer increased yields and increased density. ‘923 teaches that such pitches may be achieved by removing QI solids (col. 5, lines 13-30). Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to have used a pitch with a QI content less than 0.05% because '774 teaches that such pitched provide increased yied and density and to have produced the pitch by removing QI material because '923 teaches that such is a suitable method of lowering the QI of a pitch.

Claim 15: '984 teaches that the substrate may be graphitized (col. 4, lines 33-47).

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa '984 in view of Bachman '431, Chu '774, and Okazaki '923, as applied to claim 11 above, and further in view of Tombrel (U.S. Patent 3,607,541, hereafter '541).

'984, '431, '774, and '923 are discussed above, but do not explicitly teach that the ramp rate is less than 10 °C/hr. However, the Examiner takes Official Notice that such rates are well known in the carbonization art. See, e.g., '541, col. 2, lines 1-5. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an art-recognized heating rate, such as 3°C/hr. because such ramp rates are known as suitable in the art.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa '984 in view of Bachman '431, Chu '774, and Okazaki '923, as applied to claim 11 above, and further in view of Struck et al. (U.S. Patent 4,512,858, hereafter '858).

'984, '431, '774, and '923 are discussed above, but do not explicitly teach that the carbonization occurs under vacuum. However, the Examiner takes Official Notice that such pressures are well known in the carbonization art. See, e.g., '858, col. 5, lines 34-36. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a vacuum during calcination because such pressures are known as suitable in the art.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa '984 in view of Bachman '431, Chu '774, and Okazaki '923, as applied to claim 11 above, and further in view of Kitago et al. (U.S. Patent 3,998,689, hereafter '689).

'984, '431, '774, and '923 are discussed above, but do not explicitly teach pretreatment for oxidation. However, '689 teaches that impregnated carbon materials may be oxidized prior

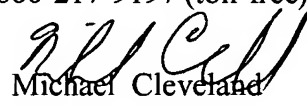
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to calcination in order to prevent material from flowing out of position during calcination. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed oxidation between impregnation and calcination in order to have prevented such a problem.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free),


Michael Cleveland
Primary Examiner
Art Unit 1762

9/19/2005